

The grassbank concept : potential applications in China ?

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Introduction and methods In the disequilibrium environments of arid rangelands, unusual shortages of forage within years and between years can be expected but seldom predicted. While conservative stocking can help to protect rangelands and pastoralists from much of the variability, at times there will be forage shortages despite a low stocking rate. Traditional mobility allowed the movement of stock over long distances to evade forage-short conditions. However, as rangeland tenure is fragmented and lands are fenced, new strategies are needed (Roe and Huntsinger 1998). In the United States, a group of pastoralists in the arid southwest known as the Malpai Borderlands Group developed what they term the "grassbank" concept to cope with drought and support range improvement and conservation, and it has been applied with mixed success in various parts of the west (White, 2007; Gripne, 2005). This paper considers the potential application of the grassbank strategy in China, using archival sources and policy analysis.

Results and discussion In China, the land tenure changes of recent decades, including the semi-private property rights arrangement called the "double-contract responsibility system" have reduced herder mobility, stimulated overstocking, and led to rangeland degradation. In 1999 a long-term drought began. The number of livestock has dropped from 108 per capita in 1998 to 33 in 2004, and the income of herders has declined substantially (Zhang Qian 2007). The central government demonstrated its concern for the Inner Mongolian grassland by committing RMB 1.5 billion for grassland restoration from 2002 to 2007. The local government took many initiatives with these funds, the most predominant of which was the Wei Feng Zhuan Yi, or "Fencing Grassland and Moving Users" (FGMU), policy implemented in 2002. The policy was intended to recover the degraded ecosystem and change herder lifestyles and practices, and this policy did lead to ecological recovery in some places in the short term. However, the policy had no clear long-term objectives, which made it difficult to respond when herders asked "how should we use the pastures reasonably after recovery?" Short term investments in rangeland recovery are important, but must be linked to longer term institutions for sustainable use of the rangelands in the future. Otherwise the short term and relatively small scale gains in ecosystem conditions resulting from infusions of government funds will be counterbalanced by the longer-term and larger scale drivers of rangeland degradation (SEPA 2006). Grassbanks may be one institution that could be applied. Some research has shown that intermediate grazing may benefit plant species diversity, plant functional group composition, aboveground net primary productivity, and ecosystem stability in Inner Mongolian pastures (Li, et al, 1994 & 1999).

Conclusions There are three categories of land in China that could be used as possible grassbanks: protected areas, residual collective rangeland, and rangelands whose owners have migrated to urban areas. In protected areas, grassbanks might not only provide emergency forage, but also mitigate hostility local people may have to protected areas. In the process of semi-privatization, every gacha (village) was allowed to retain some collective land, which might be managed as a grassbank. Finally, areas abandoned by families moving to urban areas might be acquired and managed by villages as a sort of grassbank. Potential problems include the funding issues that have plagued American grassbanks, but also social and institutional barriers to changing the use and purpose of protected areas and collective lands.

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